

PSYCHE.

THE NEW ENGLAND MELANOPLI.

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Some years ago (Proc. Bost. soc. nat. hist., xix, 281-286, 1878) I published a table for the determination of the New England species of *Melanoplus*, of which I enumerated six species. Several errors are to be found in the table, leading to much confusion, and I therefore offer here another, more in harmony with a revision of all the *Melanopli* of North America I shall shortly publish with illustrations. At the same time the other species of the group *Melanopli*, embracing all our New England *Acrididae* excepting *Schistocerca*, are added, including some species not then known to inhabit New England. Most of the additional species are due to the industrious and discriminating collections of Mr. A. P. Morse, in whose Preliminary List of the *Acridae*

of New England (*Psyche*, vii, 102-108) all the thirteen species here enumerated will be found but sometimes under different names, my revision showing the necessity of several alterations. As the reasons for the changes will appear in my forthcoming paper, I will merely add here a list of the changes by reference to Morse's List.

<i>Morse's List.</i>	<i>Present List.</i>
<i>Hesperot. viridis.</i>	<i>Hesperot. brevipennis.</i>
<i>Pezot. glacialis.</i>	<i>Podisma glacialis.</i>
<i>Pezot. scudderi.</i>	<i>Melanopl. scudderi.</i>
<i>Pezot. manca.</i>	<i>Melanopl. mancus.</i>
<i>Melanopl. junius.</i>	<i>Melanopl. extremus.</i>
<i>Pezot. borealis.</i>	<i>Melanopl. fasciatus.</i>
<i>Melanopl. bivittatus.</i>	<i>Melanopl. femoratus.</i>
<i>Paroxya atlantica.</i>	<i>Paroxya floridana.</i>

The *Melanoplus rectus* of my former table is *M. fasciatus* of the present.

Table of the Genera of N. E. Melanopli.

- a¹. Pronotum much deeper than broad; subgenital plate of ♂ furnished with an apical postmarginal tubercle *HESPEROTETTIX (brevipennis).*
- a². Pronotum but little deeper than broad; subgenital plate of ♂ with no apical tubercle, or if present it involves the apical margin.
- b¹. Without trace of tegmina or wings *PODISMA (glacialis).*
- b². With longer or shorter tegmina and wings.
- c¹. Face less declivent than in the alternate category; dorsum of pronotum only half as long again as the average breadth even in the ♂; antennae, even in the ♂, shorter than the hind femora and not more than twice as long as the pronotum alone *MELANOPLUS.*

c². Face more declivent than in the alternate category ; dorsum of pronotum twice as long as the average breadth, at least in the ♂ ; antennae, at least in ♂, generally longer than the hind femora, and much more than twice as long as head and pronotum together *PAROXYA (floridana)*.

Table of the N. E. Species of Melanoplus: Males.

- a¹. Tegmina no longer or scarcely longer than the pronotum.
 - b¹. Interspace between mesosternal lobes fully twice as long as broad ; median carina as distinct on the prozona as on the metazona ; cerci stout, less than three times as long as middle breadth *scudderi*.
 - b². Interspace between mesosternal lobes somewhat longer than broad ; median carina less distinct on the prozona than on the metazona ; cerci slender, at least four times as long as middle breadth *maucus*.
- a². Tegmina much longer than the pronotum, generally surpassing the abdomen.
 - b¹. Furcula very much longer than the last dorsal segment from which it springs, usually a third as long as the supraanal plate.
 - c¹. Subgenital plate with the apical margin notched *atlantis*.
 - c². Subgenital plate with the apical margin entire.
 - d¹. Distal half of cerci less than half as broad as the extreme base ; interspace between mesosternal lobes twice as long as broad *femur-rubrum*.
 - d². Distal half of cerci more than half as broad as the extreme base ; interspace between mesosternal lobes not much longer than broad *extremus*.
- b². Furcula feebly developed, generally shorter, at most scarcely longer, than the last dorsal segment from which it springs.
 - c¹. Cerci of nearly equal width and simple throughout *fasciatus*.
 - c². Cerci of very unequal width or irregular shape.
 - d¹. Cerci apically furcate with unequal forks, the lower the smaller and sometimes reduced to little more than an angulation ; apical margin of subgenital plate with no median tubercle.
 - e¹. Furcula distinct, consisting of a pair of spines as long as or slightly longer than the last dorsal segment ; lower fork of cerci subobsolete ; base of lateral margin of subgenital plate incurved *minor*.
 - e². Furcula obsolete ; lower fork of cerci slender, but half as long as upper fork ; base of lateral margin of subgenital plate not incurved *collinus*.
 - d². Cerci apically expanded and lobate ; apical margin of subgenital plate with a median tubercle.
 - e¹. Interspace between mesosternal lobes nearly twice as long as broad ; prosternal spine long ; cerci boot-shaped *femoratus*.
 - e². Interspace between mesosternal lobes subquadrate ; prosternal spine short ; cerci terminating in a transversely oval tumid lobe *punctulatus*.

Table of the N. E. Species of Melanoplus: Females.

a¹. Tegmina no longer or scarcely longer than the pronotum.

b¹. Interspace between mesosternal lobes quadrate or slightly longer than broad; median carina as distinct on the prozona as on the metazona; basal tooth of lower valves of ovipositor blunt and rounded *scudderi*.

b². Interspace between mesosternal lobes distinctly transverse; median carina less distinct on the prozona than on the metazona; basal tooth of lower valves of ovipositor sharp, rectangular *maeus*.

a². Tegmina much longer than the pronotum, often surpassing the abdomen.

b¹. Lower valves of ovipositor apically more or less distinctly decurved, with a distinct median tooth on the lower outer margin; prosternal spine moderate or long, generally about as high as the mesosternum.

c¹. Interspace between mesosternal lobes longitudinal or quadrate.

d¹. Rather large; prozona distinctly longitudinal; line of division between the dorsal and lateral areas of the closed tegmina marked by a yellow stripe generally extending forward to mark the lateral carinae of the pronotum. *femoratus*.

d². Medium sized; prozona quadrate or transverse; no yellow stripe on tegmina or lateral carinae.

e¹. Median carina of pronotum generally indistinct or wholly wanting on the prozona; prosternal spine as seen from in front tapering, generally bluntly pointed at tip *atlantis*.

e². Median carina of pronotum generally distinct on the prozona; prosternal spine nearly cylindrical, as seen from the front scarcely tapering except at extreme tip, which is generally bluntly rounded, sometimes a little enlarged *femur-rubrum*.

c². Interspace between mesosternal lobes distinctly, sometimes strongly transverse.

d¹. Interspace between mesosternal lobes strongly transverse; tegmina generally shorter than the abdomen; median carina almost as distinct on the prozona as on the metazona; interval between eyes above narrower than in the alternate category.

e¹. Hind femora with no transverse bands; metazona obscurely and bluntly ruguloso-punctate *extremus*.

e². Hind femora with dark oblique fasciation; metazona distinctly and sharply ruguloso-punctate *fasciatus*.

d². Interspace between mesosternal lobes but little transverse; tegmina always as long as the abdomen; median carina distinctly dulled on the prozona; interval between eyes above broader than in the alternate category.

e¹. Rather slender bodied; outer edge of upper valves of ovipositor with a single or no denticulation at the base of the scoop; hind tibiae normally glaucous but sometimes red *minor*.

e². Rather stout bodied; outer edge of upper valves of ovipositor crenulato-denticulate on the basal half of the scoop; hind tibiae coral red. *collinus*.

b². Lower valves of ovipositor straight, with feeblest signs of a median tooth; interspace between mesosternal lobes strongly transverse; prosternal spine short, not nearly reaching the level of the mesosternum . . . *punctulatus*.

Two of our species, *M. extremus* and *M. fasciatus*, are distinctly and strikingly dimorphic, occasionally occurring with tegmina surpassing the hind femora. These long-winged forms are known in New England only in

M. extremus, and seem to be confined almost or quite exclusively to very high elevations. The long-winged form of *M. fasciatus* has been seen by me only from Michigan, but should be looked for in northern New England.

ON COLEOPTERA FOUND WITH ANTS. THIRD PAPER.

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To the earlier contributions of mine on this subject, published in some of the preceding numbers of *Psyche*, I wish to add the following observations, made at Iowa City during the years 1894 and 1895. A number of the records are new, both as regards host and locality, while a few are inserted simply as information touching upon dates or as furnishing additional proof regarding the true status of certain species. I have adopted the plan of taking up each species of ant separately and enumerating its guests; as in this way it would seem easier for the reader to form an idea of what is likely to be found in a given nest. For identification of all the hosts I am under obligations to Mr.

Theo. Pergande, while most of the Pselaphidae and Staphylinidae were named by Captain Casey, who, as we all know, has for years made careful studies among them. Several undescribed Aleocharini and some Scydmaenidae are also in my collections from ants' nests, but these are not included in the present paper.

1. *Formica subsericea* Say. A strong colony of this species, having its nest in a little rocky mound, was examined on April 14 and the following beetles obtained: *Ptomaphagus parasitus* Lec., eight specimens, chiefly at a distance of several inches from the surface. They are lively little fellows and run about actively in their efforts